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TRANSMITTAL FORM <i>(to be used for all correspondence after initial filing)</i>	Application Number	10/665,530	
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	First Named Inventor	HARCHANKO, John S.	
	Art Unit	2873	
	Examiner Name	Stultz, Jessica T	
Total Number of Pages in This Submission	12	Attorney Docket Number	MEMS-0178-US

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Firm Name	Muncy, Geissler, Olds & Lowe, PLLC		
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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of

HARCHANKO, J.S.

Serial No. 10/665,530

Filed: 22 Sept. 2003

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)For: OPTICAL ELEMENT/DEVICE
MOUNTING PROCESS AND
APPARATUS

) Group No. 2873

REPLY BRIEF UNDER 37 C.F.R. § 41.41

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In response to the Final Office Action dated November 22, 2006, Appellants on May 22, 2007 requested an Appeal to consider the issues raised in the Final Office Action. Accordingly, a Brief on Appeal Under 37 C.F.R. §41.37 was filed. In response to the Notification of Non-Compliant Appeal Brief dated November 8, 2007, Appellant submitted an Amended Appeal Brief on November 27, 2007. An Examiner's Answer was mailed February 26, 2008 and this Reply Brief is being provided in response thereto.

The fees required under § 41.20(b)(2) should be charged to Deposit Account No. 50-3828.

This Reply Brief contains the current title page along with items under the following headings as required by C.F.R. § 41.41 and M.P.E.P. § 1208:

- I. Status of Claims
- II. Grounds of Rejection to be Reviewed on Appeal
- III. Argument
- VI. Claims
- Appendix A.- Listing of the Claims

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I. Status of Claims

In the Application on appeal, claims 15-27 are pending. Claim 15 is independent. Claims 15-27 are rejected and are on appeal. No new amendments are presented concurrently with this Reply Brief. A copy of the claims involved in the present appeal is attached hereto as Appendix A

II. Grounds of Rejection to be Reviewed on Appeal

The Examiner has finally rejected: claims 15-16, 18, and 20-25 under 35 U.S.C. §102(e) as being anticipated by U.S. Patent No. 7,006,426 (Chiu); and claims 17 and 26-27 under 35 U.S.C. §103(a) as being unpatentable over Chiu. Each of the items raised is addressed below.

III. Argument

Appellants have reviewed the Examiner's Answer dated February 26, 2008, and respectfully disagree with the Examiner's characterization of the Chiu reference and its application in the rejection of the claims. In an effort to correct the mischaracterizations in the Examiner's Answer and to provide the Examiner and the Board with a more accurate understanding of the Chiu reference, Appellants will address the following items in the sub-sections below corresponding to each ground of rejection.

A. Chiu fails to anticipate claims 15-16, 18, and 20-25 under 35 U.S.C. §102(e).

1. The Chiu reference neither explicitly nor inherently discloses "a reference optical element ... and at least a first optical element attached to a predetermined structure of said etched structures" as recited in independent claim 15.

In the Examiner's Answer, the Examiner disagrees with Appellant's statement that lens element 12 cannot be both the reference optical element and the first optical

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element as recited in claim 15. In support of this position, the Examiner alleges that "there are multiple optical elements '12' formed on wafer '10' and attached to the mount system of '20' of Chui ... and therefore one of the optical elements is the reference element and others are the 'at least first optical elements.'" (See page 8, first full paragraph.)

Appellants submit that there are multiple lens elements 12 formed on wafer 10, as Chiu discloses the lens elements 12 are manufactured using an etching process (col. 1, lines 40 – 67; Fig. 1). However, none of these lens elements are "attached to mount system 20 of Chui" as asserted by the Examiner. The purported "mount system 20" is merely a glass wafer used to manufacture a plurality multiple base elements 22 (col. 2, lines 1-6; Fig. 2). Accordingly, the glass wafer 20 is not used, as alleged by the Examiner, in a manner wherein lens elements 12 are "attached to the mounted system '20'" (Examiner's Answer: page 8, line 12).

Chiu discloses that "[a]fter formation of the wafers 10 and 20 in the configurations shown in FIGS. 1 and 2, the lens elements 12 and base elements 22 are separated from wafers" (col. 2, lines 6-9). As shown in FIG. 4, each lens element 12 is mounted on a base element 22 (col. 2, lines 59-60). Accordingly, only one lens element 12 is present in the assembled optical unit 40 disclosed by Chiu in Fig. 4.

Clearly, the multiple lens elements 12 are related to the manufacture of the lens elements 12, not the combination of element 12 and 22. Accordingly, there is no teaching or suggestion to add an additional element 12 so that "one of the optical elements is the reference element and the others are the 'at least first optical elements,'" as alleged in the Final Office Action. Instead, element 12 forms part of an optical unit for reading optical disks as illustrated in Fig. 4 of the Chiu reference. Adding the additional structures as suggested by the Examiner would render the device useless.

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Because the Chui reference as applied by the Examiner neither expressly nor inherently describes every feature of Appellant's claimed combinations as detailed in the foregoing arguments. Accordingly, Appellant respectfully submits that the applied Chiu reference does not anticipate independent claim 15 as alleged by the Examiner.

2. The Chiu reference neither explicitly nor inherently discloses "wherein said etched structure is covered with a filling compound to change the index of refraction" as recited in dependent claim 18.

In the Examiner's answer, the Examiner alleged that the reflective thin films Chiu uses to provided reflective surfaces may serve as a filler because the films "at least partly fill the space between the mounting structures and the optical elements" (Examiner's Answer: page 8, lines 19-20). Applicants respectfully disagree and submit the Examiner is misinterpreting the Chiu reference. None of the mirrored surfaces shown in the optical assembly 42 of FIG. 4 occur between a physical interface between lens element 12 and base element 22. Accordingly, the mirror coatings could not serve to "partially fill space between the mounting structures and the optical elements" as purported by the Examiner. Moreover, the thickness of the coating is varied only to alter the reflectivity of the mirror 28 (col. 2; lines 48-51), not fill a void between optical elements.

Appellant respectfully submits that a reflective thin film cannot be reasonably interpreted as a filling compound as alleged, and that one skilled in the art would not consider the reflective thin films taught by Chiu to be a filling compound. Accordingly, Appellant respectfully submits that the applied Chiu reference does not anticipate dependent claim 18 as alleged by the Examiner.

3. Chui fails to disclose all of the features recited in dependent claims 16 and 19-25.

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Appellant also respectfully submits that dependent claims 16 and 19-25, which all depend from either directly or indirectly from independent claim 15, are patentable for at least the same reasons as the provided above in the arguments for the allowability of claim 15.

B. Chiu fails to render claims 17 and 26-27 unpatentable under 35 U.S.C. §103(a).

1. *The Chiu reference neither explicitly nor inherently teaches "wherein said recess has a curved shape to at least partially conform to the convex shape of said reference optical element," as recited in dependent claim 26.*

In the Examiner's Answer, the Examiner alleged that "it is not required that the examiner provide a specific reference to show the simple substitution of one known element for another which would yield a predictable result," citing *Ex Parte Smith* 83 USPQ2d as authority in support of this assertion.

Appellants submit *Ex Parte Smith* does not stand for this proposition. *Ex Parte Smith* merely provided an example of one of a number of rationales set forth in *KSR v. Teleflex* 127 S. CT. 1727 (and identified in MPEP §2143) to support a conclusion of obviousness which are consistent with the proper "functional approach" to the determination of obviousness as laid down in *Graham*. *Smith* merely set forth a factual context for the rational that simple substitution of one known element for another to obtain predictable results can provide a rational for obviousness.

The Examiner is respectfully reminded that KSR did not alter the fact that the Examiner must set forth a *prima facie* case of obviousness, wherein the examiner "must provide evidence which as a whole shows that the legal determination sought to be proved (i.e., the reference teachings establish a *prima facie* case of obviousness) is more probable than not." (See MPEP §2142).

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Appellants submit that the Examiner failed to establish a *prima facie* case of obviousness because no supporting reference was provided to make up for Chiu's alleged deficiency. Accordingly, the rejection claim 26 must be reversed and should be considered allowable over the prior art.

2. *The Chiu reference neither explicitly nor inherently teaches "wherein said etched structure forms a cavity and wherein said reference optical element is located inside said cavity and the filling compound is used to fill said cavity," as recited in dependent claim 27.*

In the Final Office Action, the Examiner indicated that Chiu fails to teach or suggest all of the features recited in claim 27. (See Final Office Action, page 6, lines 8-9). The Examiner attempts to cure this deficiency by merely asserting the conclusory statement that

[I]t is well known in the art of optical elements for the elements to be held together by cavities filled with adhesive for the purpose of forming strong bonds between the optical elements.

(Final Office Action: page 6, lines 9-11.) Because no secondary reference was provided as evidentiary support, the Examiner failed to establish a *prima facie* case of obviousness. See MPEP § 2143.01.

In the Examiner's Answer, the Examiner asserted that "it is not required that the examiner provide a specific reference to show 'the mere application of a known technique to a piece of prior art ready for improvement' which would yield a predictable result." The Examiner again cites *Ex Parte Smith* in support of this assertion. (See Examiner's Answer: page 9, lines 21-23.)

As set forth in the aforementioned argument for claim 26, above, the guidance provided in *Ex Parte Smith* does not relieve the Examiner of the burden of providing evidentiary support in establishing *prima facie* obviousness. Accordingly, claim 27 should be considered allowable over the prior art.

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3. Chui fails to teach or suggest all of the features recited in dependent claim 17.

Appellant also respectfully submits that dependent claim 17, which depends from independent claim 15, is patentable for at least the same reasons provided above in the arguments for the allowability of claim 15.

C. Summary

Appellants respectfully submit that the Examiner is misinterpreting the Chiu reference, which fails to anticipate, either explicitly or inherently, or render obvious, the claims presented in the instant application.

VI. CLAIMS

A copy of the claims involved in the present appeal is attached hereto as Appendix A. As indicated above, the claims in Appendix A include the amendments made in the After-Final Reply filed by Appellant on May 22, 2007.

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CONCLUSION

Appellants respectfully submit that claims 15-27 are patentable over the applied art and that all of the rejections and objections of record should be reversed.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-3828 for any additional fees required.

Respectfully submitted,

Mark E. Olds
Registration No. 46507

Dated: April 24, 2008

By: 

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APPENDIX A: CLAIMS

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1-14. Canceled.

15. (Previously Presented) A multi-optical element device comprising:

a reference optical element;

a mounting system, wherein said mounting system is formed by etching substrate(s) to form a recess to receive the reference optical element, where said recess at least partially conforms to the shape of said reference optical element, and where said reference optical element is attached to said recess in said substrate, said mounting system contains etched substrate(s) forming etched structures upon which optical devices can be attached; and

at least a first optical element attached to a predetermined structure of said etched structures.

16. (Original) The multi-optical element device according to claim 15, wherein said reference optical element and/or said first optical element are made from glass.

17. (Original) The multi-optical element device according to claim 15, wherein said reference optical element and/or said first optical element are made from GaP.

18. (Original) The multi-optical element device according to claim 15, wherein said etched structure is covered with a filling compound to change the index of refraction.

19. (Original) The multi-optical element device according to claim 18, wherein the filling compound is Epoxy-Master Bond EP19HT.

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20. (Original) The multi-optical element device according to claim 15, wherein the size of said reference and first optical elements are between 1 meter and 1 nanometer.

21. (Original) The multi-optical element device according to claim 15, wherein the size of said reference and first optical elements are between tens of centimeters and 1 nanometer.

22. (Original) The multi-optical element device according to claim 15, wherein the size of said reference and first optical elements are between several millimeters and 1 nanometer.

23. (Previously Presented) The multi-optical element device according to claim 18, wherein the size of said reference and first optical elements are between several millimeters and 1 nanometer.

24. (Previously Presented) The multi-optical element device according to claim 15, wherein the reference optical element and the first optical element are aligned along substantially the same optical axis.

25. (Previously Presented) The multi-optical element device according to claim 15, wherein the reference optical element and the first optical element are aligned in a substantially perpendicular direction with respect to a line through the center of each optical element.

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26. (Previously Presented) The multi-optical element device according to claim 15, wherein the reference optical element is a lens having a convex surface and wherein said recess has a curved shape to at least partially conform to the convex shape of said reference optical element.

27. (Previously Presented) The multi-optical element device according to claim 15, wherein said etched structure forms a cavity and wherein said reference optical element is located inside said cavity and the filling compound is used to fill said cavity.